

neither the claims nor this detailed description shall be construed in a limiting sense, and following a review of this disclosure, those of ordinary skill in the art will appreciate the wide variety of audio appliances, and related methods and systems that can be devised under disclosed and claimed concepts.

[0094] Moreover, nothing disclosed herein is intended to be dedicated to the public regardless of whether such disclosure is explicitly recited in the claims. To aid the Patent Office and any readers of any patent issued on this application in interpreting the claims appended hereto or otherwise presented throughout prosecution of this or any continuing patent application, applicants wish to note that they do not intend any claimed feature to be construed under or otherwise to invoke the provisions of 35 U.S.C. § 112(f), unless the phrase “means for” or “step for” is explicitly used in the particular claim.

[0095] The appended claims are not intended to be limited to the embodiments shown herein, but are to be accorded the full scope consistent with the language of the claims, wherein reference to a feature in the singular, such as by use of the article “a” or “an” is not intended to mean “one and only one” unless specifically so stated, but rather “one or more”. Further, in view of the many possible embodiments to which the disclosed principles can be applied, I reserve to the right to claim any and all combinations of features and technologies described herein as understood by a person of ordinary skill in the art, including, for example, all that comes within the scope and spirit of the following claims.

What is claimed is:

1. An electro-acoustic transducer comprising:
a unitary member that includes an acoustic diaphragm and a pedestal integrally formed with the acoustic diaphragm, the acoustic diaphragm defining a first major surface and an opposed second major surface, wherein each of the first major surface and the opposed second major surface defines a corresponding major axis and a minor axis, with each respective major axis being longer than the corresponding minor axis, wherein the pedestal extends transversely from the second major surface;
a drive element; and
an adhesively bonded lap joint coupling the drive element to the pedestal of the unitary member.
2. The electro-acoustic transducer of claim 1, wherein the acoustic diaphragm defines an outer periphery of the unitary member, and wherein the pedestal extends from the second major surface at a position adjacent the outer periphery.
3. The electro-acoustic transducer of claim 1, wherein the acoustic diaphragm defines an outer periphery of the unitary member, and the lap joint is positioned inwardly of the outer periphery.
4. The electro-acoustic transducer of claim 3, wherein the unitary member further comprises a stiffener extending from the first major surface and along the acoustic diaphragm toward the outer periphery.
5. The electro-acoustic transducer of claim 4, wherein the stiffener is integrally formed with the diaphragm.
6. The electro-acoustic transducer of claim 4, wherein the stiffener comprises an elongate rib having a longitudinal axis and defining a cross-sectional area, wherein the cross-sectional area tapers along the longitudinal axis and toward the outer periphery.

7. The electro-acoustic transducer of claim 4, wherein the stiffener modifies a break-up frequency mode of the diaphragm.

8. The electro-acoustic transducer of claim 1, wherein the drive element includes a coil having a first plurality of windings positioned adjacent to the acoustic diaphragm and a second plurality of windings positioned distally from the acoustic diaphragm.

9. An electronic device, comprising:

an acoustic enclosure; and

an electro-acoustic transducer disposed in the acoustic enclosure, the electro-acoustic transducer comprising:

a unitary member that includes an acoustic diaphragm and a pedestal integrally formed with the acoustic diaphragm, the acoustic diaphragm defining a first major surface and an opposed second major surface, wherein each of the first major surface and the opposed second major surface defines a corresponding major axis and a minor axis, with each respective major axis being longer than the corresponding minor axis, wherein the pedestal extends transversely from the second major surface;

a drive element; and

an adhesively bonded lap joint coupling the drive element to the pedestal of the unitary member.

10. The electronic device of claim 9, wherein the acoustic diaphragm defines an outer periphery of the unitary member, and wherein the pedestal extends from the second major surface at a position adjacent the outer periphery.

11. The electronic device of claim 9, wherein the acoustic diaphragm of the unitary member defines an outer periphery and the lap joint is positioned inwardly of the outer periphery.

12. The electronic device of claim 11, wherein the unitary member further comprises a stiffener extending from the first major surface and along the acoustic diaphragm toward the outer periphery.

13. The electronic device of claim 12, wherein the stiffener is integrally formed with the acoustic diaphragm.

14. The electronic device of claim 12, wherein the stiffener comprises an elongate rib having a longitudinal axis and defining a cross-sectional area, wherein the cross-sectional area tapers along the longitudinal axis and toward the outer periphery.

15. The electronic device of claim 12, wherein the stiffener modifies a break-up frequency mode of the diaphragm.

16. The electronic device of claim 9, wherein the drive element includes a coil having a first plurality of windings positioned adjacent to the acoustic diaphragm and a second plurality of windings positioned distally from the acoustic diaphragm.

17. The electronic device of claim 9, wherein the electronic device is a standalone electronic device, and wherein the acoustic enclosure forms a housing of the standalone electronic device.

18. The electronic device of claim 17, wherein the electronic device comprises a wearable electronic device.

19. A method of operating an electronic device, the method comprising:

providing a current to a drive element of an electro-acoustic transducer, the electro-acoustic transducer comprising a unitary member that includes an acoustic diaphragm and a pedestal integrally formed with the acoustic diaphragm, the acoustic diaphragm defining a